

CLAIMS

What is claimed is:

1. A motor, comprising:  
5 an outer housing;  
a rotatable shaft disposed within the housing;  
a plurality of wear surfaces that support the rotatable shaft;  
a lubricant pump disposed within the housing; and  
a conduit for conducting a lubricant from the lubricant pump to the  
10 plurality of wear surfaces.
2. The motor as recited in claim 1, wherein the lubricant comprises an oil.
3. The motor as recited in claim 2, wherein the conduit is disposed in the  
15 rotatable shaft.
4. The motor as recited in claim 1, wherein the lubricant pump comprises: a  
pump body having an eccentric oil cavity, and a pump rotor disposed in the eccentric oil  
cavity.  
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5. The motor as recited in claim 4, wherein the lubricant pump further  
comprises a plurality of blades slidably mounted to the pump rotor.

6. The motor as recited in claim 1, wherein the lubricant pump comprises an inner gear and an outer gear to provide a pumping action.

5 7. The motor as recited in claim 3, wherein the lubricant pump is disposed generally at an axial end of the outer housing.

8. The motor as recited in claim 1, wherein the lubricant pump comprises an impeller.

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9. A submersible pumping system, comprising:  
a submersible pump;  
a motor protector; and  
a submersible motor having an internal pump to supply a pressurized  
lubricant to a desired location within the submersible motor.

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10. The submersible pumping system as recited in claim 9, further comprising a conduit extending from the internal pump to the desired location.

20 11. The submersible pumping system as recited in claim 10, wherein the submersible motor comprises a rotatable shaft and the conduit is disposed at least partially within the shaft.

12. The submersible pumping system as recited in claim 11, wherein the submersible motor comprises a bearing at the desired location to receive the pressurized lubricant.

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13. The submersible pumping system as recited in claim 9, wherein the internal pump comprises an impeller pump.

14. The submersible pumping system as recited in claim 9, wherein the internal  
10 pump comprises an internal gear and an external gear to pressurize the pressurized lubricant.

15. The submersible pumping system as recited in claim 9, wherein the  
internal pump comprises: a pump body having an eccentric oil cavity, and a pump rotor  
15 disposed in the eccentric oil cavity.

16. The submersible pumping system as recited in claim 15, wherein the lubricant pump further comprises a plurality of blades slidably mounted to the pump rotor.

17. The submersible pumping system as recited in claim 16, wherein the  
20 lubricant comprises an oil.

18. A submersible motor, comprising:
- an outer housing;
- a stator disposed within the outer housing;
- a rotor rotatably mounted within the stator;
- 5 a lubrication system to distribute a lubricant to one or more desired locations within the outer housing; and
- a pump internal to the outer housing to pressurize the lubricant within the lubrication system.
- 10 19. The submersible motor as recited in claim 18, wherein the rotor is mounted on the shaft.
20. The submersible motor as recited in claim 19, wherein the lubrication system extends at least partially through the shaft.
- 15 21. The submersible motor as recited in claim 20, wherein the pump directs the lubricant along a pump flow path to an inlet formed on the shaft.
22. The submersible motor as recited in claim 21, wherein the lubricant pump comprises: a pump body having an eccentric oil cavity, and a pump rotor disposed in the eccentric oil cavity.
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23. The submersible motor as recited in claim 22, wherein the lubricant pump comprises an inner gear and an outer gear to provide a pumping action.

24. A method for increasing the life expectancy of a subterranean completion  
5 having a submersible motor, comprising:

directing a flow of lubricant to an area of the submersible motor benefiting  
from lubrication; and  
pressurizing the flow of lubricant with an internal pump.

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25. The method as recited in claim 24, wherein directing comprises directing the flow of lubricant to a bearing.

26. The method as recited in claim 25, wherein directing comprises directing a  
15 flow of oil.

27. The method as recited in claim 24, wherein directing comprises directing the flow of lubricant along a conduit formed in a motor shaft.

28. The method recited in claim 24, further comprising combining the  
20 submersible motor with a motor protector.

29. The method as recited in claim 28, further comprising combining the submersible motor with a submersible pump.

30. The method as recited in claim 28, further comprising forming the internal  
5 pump with an impeller.

31. The method as recited in claim 28, further comprising locating the internal pump above a rotor of the submersible motor.

10 32. A submersible component, comprising:  
an outer housing configured for submersion in a liquid;  
a lubrication system disposed within the outer housing to distribute a  
lubricant to one or more desired locations within the outer  
housing; and  
15 a pump disposed within the outer housing to pressurize the lubricant within  
the lubrication system.

33. The submersible component as recited in claim 32, further comprising a drive shaft, wherein the lubrication system extends at least partially through the drive shaft.  
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34. The submersible component as recited in claim 32, further comprising a bearing at the desired location to receive the pressurized lubricant.